HA1140

689

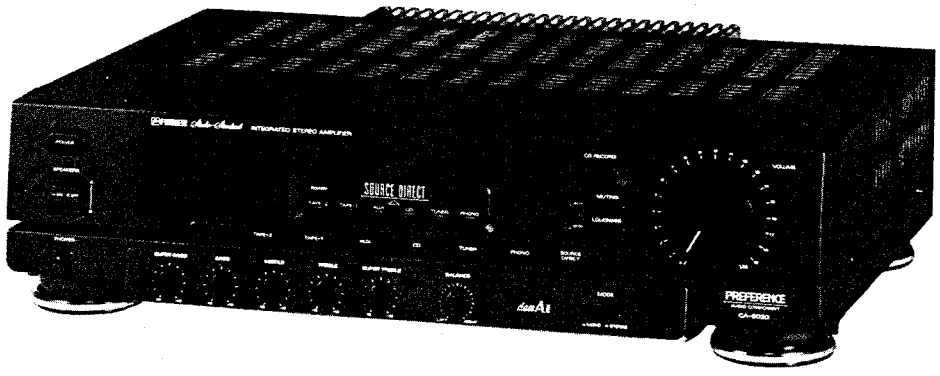
SERVICE MANUAL

FISHER

INTEGRATED STEREO AMPLIFIER

CA-9030

(EUROPE)



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SPECIFICATIONS

POWER AMPLIFIER SECTION

Minimum RMS sine wave power per channel within the stated bandwidth at no more than the stated distortion and with an 8-ohm load ..... DIN 80 Watts
Power Bandwidth ..... 40 Hz – 12.5 kHz
Total Harmonic Distortion ..... 0.05 %
I.M. Distortion ..... 0.05 %
Speaker Damping ..... >30

PREAMPLIFIER SECTION

Frequency Response
- Phono (RIAA) ..... ±1 dB
- AUX (20 Hz – 20 kHz) ..... ±1 dB

Input Sensitivity and Impedance
Phono ..... 2.5 mV/50 kΩ
Tape Monitor 1,2 ..... 150 mV/50 kΩ
Tuner/AUX/CD ..... 150 mV/50 kΩ
Phono Maximum Input Capability ..... 160 mV

Tone Control
- Super Bass ..... ±10 dB
- Bass ..... ±10 dB
- Middle ..... ±10 dB
- Treble ..... ±10 dB
- Super Treble ..... ±10 dB

Loudness Contour (100 Hz/10 kHz) ..... +8 dB/+4 dB
Hum and Noise (IHF Short Circuit, A Network)
- Phono ..... 70 dB
- Tape Monitor 1,2 ..... 90 dB
- Tuner/AUX/CD ..... 90 dB
- Source Direct (AUX) ..... 95 dB

GENERAL

Power Requirements ..... AC 220 V (50 Hz) 400 W
AC Outlets (Switched) 2
Dimensions (WxHxD) ..... 440 x 112 x 335 mm
Weight (Approximate) ..... 7.7 kg

– Specifications and design are subject to change without notice. –

REFERENCE No. WM-570567

689

POWER AMPLIFIER ADJUSTMENT

BEFORE ADJUSTMENT

Unplug the AC power cord and set the front panel controls as follows:

- Power switch to OFF position.
- Set the SPEAKERS switch to the OFF position.
- Turn the MASTER VOLUME Control to minimum.
- IDLING CURRENT ADJUSTMENT VR401/VR402 (on the Main P.C.Board) setting to mechanical center position.
- Connect the AC power cord and Power switch to the ON position.

IDLING CURRENT ADJUSTMENT

This adjustment is very sensitive to changes in ambient temperature. Allow set to operate for 2 minutes before attempting this alignment.

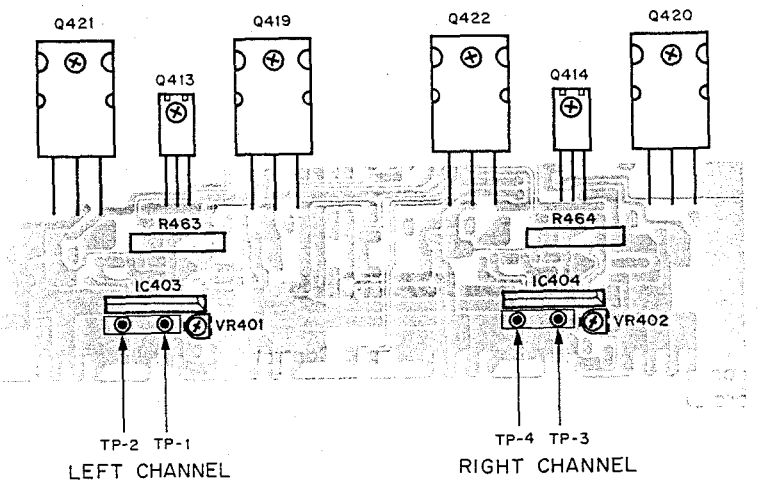
LEFT CHANNEL AMPLIFIER

1. Connect the DC Voltmeter between Test Pins TP-2 and TP-1 on the Main P.C.Board.
2. Adjust the VR401 for an indication of 5mV ±0.5mV on the DC Voltmeter.

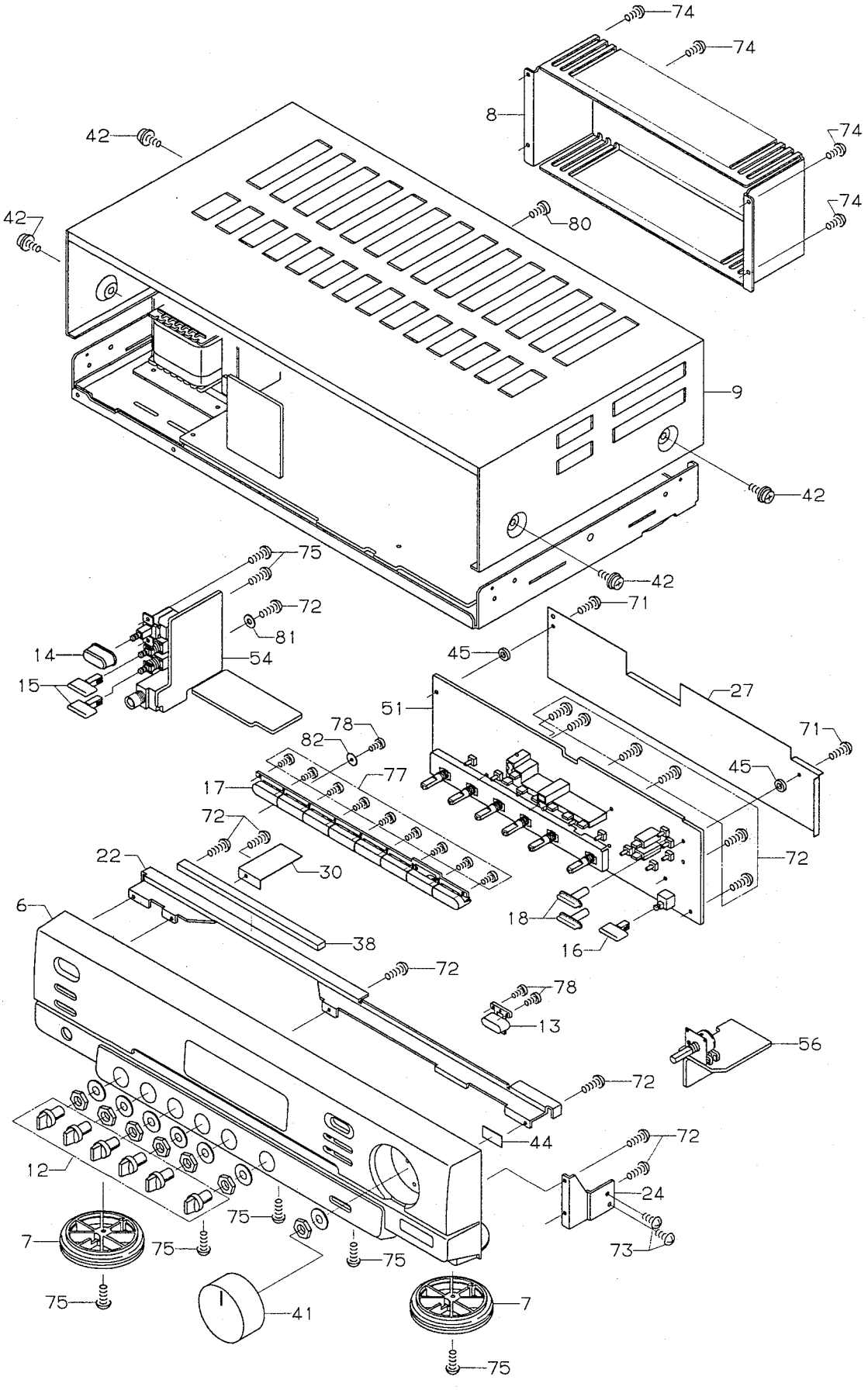
RIGHT CHANNEL AMPLIFIER

1. Connect the DC Voltmeter between Test Pins TP-4 and TP-3 on the Main P.C.Board.
2. Adjust the VR402 for an indication of 5mV ±0.5mV on the DC Voltmeter.

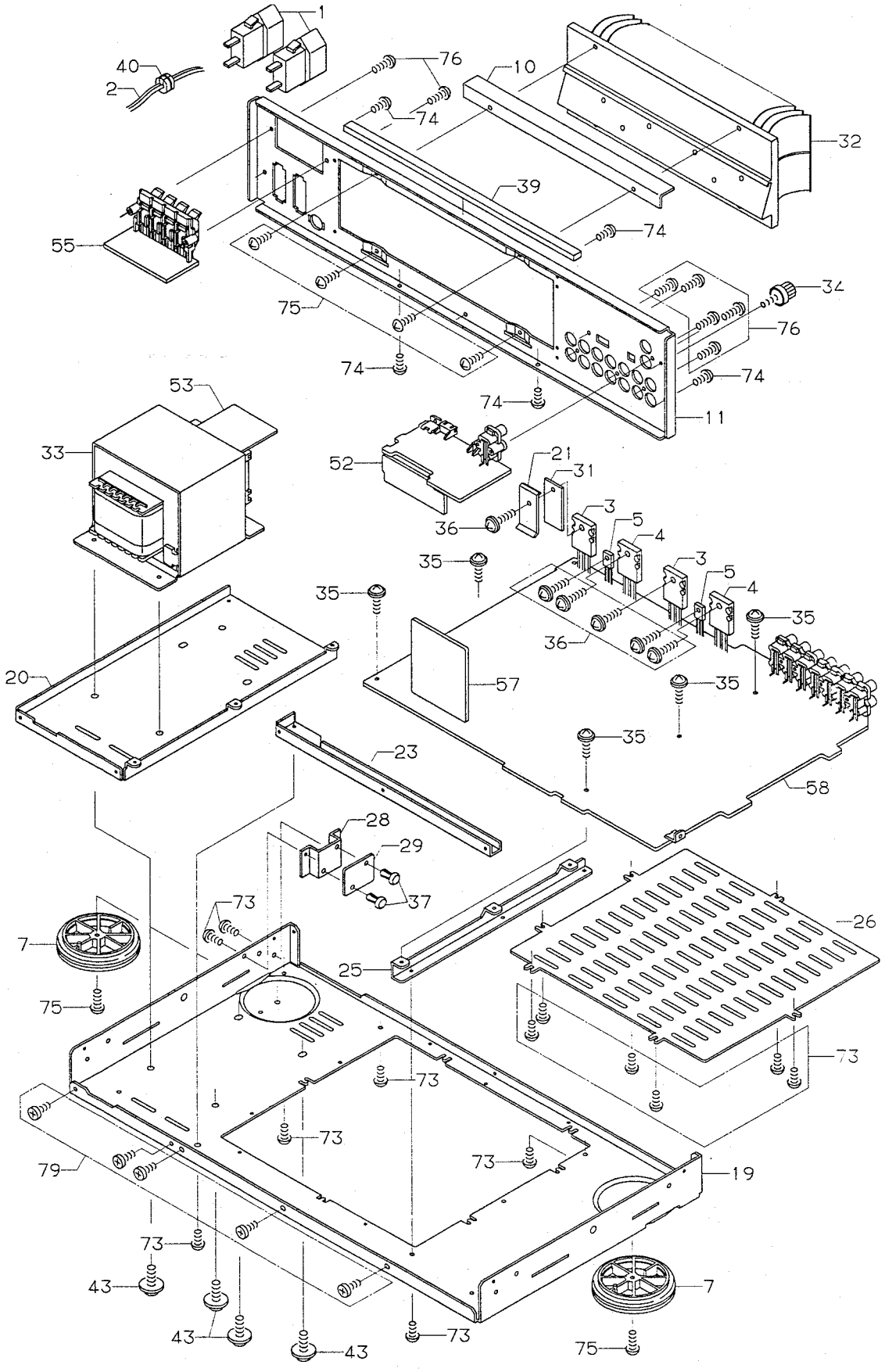
ADJUSTMENT POINTS



CABINET & CHASSIS EXPLODED VIEW (1)



CABINET & CHASSIS EXPLODED VIEW (2)



CABINET & CHASSIS PARTS LIST

Ref. No.	Part No.	Description	Q'ty
PACKAGE			
	620 210 1309	Inner Carton	1
	620 210 0050	Pad,Left	1
	620 210 0067	Pad,Right	1
	620 210 0166	Pad	1
	620 059 6596	Patching Sheet	1
	620 148 8012	Sheet Polyethylene	1
	620 152 7452	Serial No. Sheet	2
ACCESSORIES			
	620 209 6162	Assy,Poly Cover	1
	620 209 6179	Instruction Manual	1
	620 057 8783	Bag Fan	1
	620 062 0543	Serial No. Sheet	1
	620 152 2624	Certificate Card	1
	620 209 1587	Label,Barcode	1
CABINET			
	620 125 8424	Wire Band	12
	620 152 7452	Serial No. Sheet	1
1	⚠ 620 017 1212	AC Socket	2
2	⚠ 620 023 7550	Power Cord	1
3	405 003 3902	TR 2SA1301-O [Q421]	1
or	405 031 2106	TR 2SA1301-R [Q421]	1
3	405 003 3902	TR 2SA1301-O [Q422]	1
or	405 031 2106	TR 2SA1301-R [Q422]	1
4	405 017 7705	TR 2SC3280-O [Q419]	1
or	405 033 3309	TR 2SC3280-R [Q419]	1
4	405 017 7705	TR 2SC3280-O [Q420]	1
or	405 033 3309	TR 2SC3280-R [Q420]	1
5	405 022 8209	TR 2SD1682-T [Q413]	1
or	405 022 8001	TR 2SD1682-S [Q413]	1
5	405 022 8209	TR 2SD1682-T [Q414]	1
or	405 022 8001	TR 2SD1682-S [Q414]	1
6	620 209 0016	Assy,Cabinet	1
7	620 198 6969	Assy,Foot	4
8	620 208 9782	Cover,Heat Sink	1
9	620 207 6614	Cover,Top	1
10	620 210 1187	Cover	1
11	620 208 9836	Panel,Rear	1
12	620 204 7270	Knob,Rotary	6
13	620 204 7317	Knob,Touch (CD Record)	1
14	620 198 0622	Button,Power	1
15	620 198 0752	Button,Push (Speakers)	2
16	620 204 7294	Button,Push (Mode)	1
17	620 209 0429	Button,Function	1
18	620 199 4025	Button (Muting Loudness)	2
19	620 204 7348	Chassis	1
20	620 210 6380	Chassis,SUB	1
21	620 210 1620	Bracket-E,TR	1
22	620 203 6526	Bracket-M	1
23	620 207 5839	Bracket-M,Chassis	1
24	620 208 7306	Bracket-M	1
25	620 204 5764	Mount-M,Chassis	1
26	620 204 7331	Plate,Bottom	1
27	620 207 6263	Insulator	1
28	620 208 9805	Insulator	1
29	620 208 9812	Insulator	1
30	620 209 8869	Insulator	1
31	620 210 1651	Insulator,TR	1
32	620 208 9799	Heat Sink	1
33	⚠ 620 208 8099	Power Trans,SEV,160VA	1
34	620 051 2152	Screw Ground	1
35	620 051 3708	Screw Braz. HD. +M3X8	5
36	620 051 3739	Screw 3.0X12 Z SMS	6
37	620 191 2746	Rivet 3.5	2
38	620 052 6142	Cushion	1
39	620 052 6159	Cushion	1
40	620 053 2136	Bushing (Power Cord)	1
41	620 204 9359	Assy,Knob,Rotary	1
42	620 123 0284	SCR TPG BIN +M4.0X8	4
43	620 123 0833	SCR Bind TAP-B +M4X10	4
44	620 123 7658	Sheet	1
45	620 125 4990	Washer,M3.0X8.0X2.0	2
51	620 208 9331	Assy,PCB,U-CON	1
52	620 208 9560	Assy,PCB,Input	1
53	620 208 9355	Assy,PCB,Fuse	1
54	620 208 9379	Assy,PCB,Power Switch	1
55	620 208 9386	Assy,PCB,Speaker Terminal	1
56	620 205 3059	Assy,PCB,Master Volume	1
57	620 205 3066	Assy,PCB,U-CON Connect	1
58	620 208 9409	Assy,PCB,Main Amplifier	1
71	411 020 5201	SCR S-TPG BRZ 2.6X10	2
72	411 020 5706	SCR S-TPG BRZ 2.6X8	13
73	411 020 7700	SCR S-TPG BRZ 3X6	15
74	411 099 9704	SCR S-TPG BRZ 3X6	9
75	411 020 8004	SCR S-TPG BRZ 3X8	13
76	411 099 9803	SCR S-TPG BRZ 3X8	7
77	411 021 0601	SCR S-TPG BIN 2X5	9
78	411 021 0809	SCR S-TPG BIN 2X6	3
79	411 021 5705	SCR S-TPG BIN 3X6	5
80	411 021 5903	SCR S-TPG BIN 3X6	1
81	412 038 0707	SPECIAL WASHER	1
82	411 092 0906	WASHER Z 2.6X10X0.5	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
ASSY,PCB,U-CON			
51	620 208 9331	Assy,PCB,U-CON	1
	411 022 8408	SCR S-TPG PAN 2X8	2
	620 204 7324	Shield,Cover	1
	620 204 7362	Spacer,LED	1
	620 052 0195	Spacer	2
	620 125 8424	Wire Band	1
CN701	620 200 1548	Connector-S,9P	1
CN702	620 205 5435	Connector-S,6P	1
CN703	620 205 5435	Connector-S,6P	1
CN704	620 205 5862	Connector-S,6P,52170	1
CN705	620 205 5879	Connector-S,7P,52170	1
CN706	620 205 5879	Connector-S,7P,52170	1
CR701	620 202 2062	Resonator,Ceram,4.19MHz	1
RA701	620 004 5186	Resistor 9X10K J	1
RA702	620 004 5513	Resistor 7X10K	1
SW701	620 016 7796	Tact Switch (PHONO)	1
SW702	620 016 7796	Tact Switch (TUNER)	1
SW703	620 016 7796	Tact Switch (CD)	1
SW704	620 016 7796	Tact Switch (AUX)	1
SW705	620 016 7796	Tact Switch (TAPE-1)	1
SW706	620 016 7796	Tact Switch (TAPE-2)	1
SW707	620 016 7796	Tact Switch (MUTE)	1
SW708	620 016 7796	Tact Switch (L.C)	1
SW709	620 016 7796	Tact Switch (C.R)	1
SW711	620 016 7796	Tact Switch (S.D)	1
SW712	620 016 6904	Push Switch 1 Key (MODE)	1
VR701	620 206 8466	VR,Rotary,2X250KSW,L=17.5	1
VR702	620 206 8466	VR,Rotary,2X250KSW,L=17.5	1
VR703	620 206 8466	VR,Rotary,2X250KSW,L=17.5	1
VR704	620 206 8466	VR,Rotary,2X250KSW,L=17.5	1
VR705	620 206 8466	VR,Rotary,2X250KSW,L=17.5	1
VR706	620 206 8473	VR,Rotary,200KW,L=17.5	1
W701	620 020 5887	Connector 1P Assy	1
IC701	410 096 0905	IC TMP47C670N-1214	1
Q701	405 019 3804	TR 2SC536-G-NP-AA	1
or	405 019 2708	TR 2SC536-F-NP-AA	1
Q702	405 018 2501	TR 2SC3399-AC	1
or	405 035 0801	TR DTC144-ES-TP	1
Q703	405 019 3804	TR 2SC536-G-NP-AA	1
or	405 019 2708	TR 2SC536-F-NP-AA	1
Q704	405 018 2501	TR 2SC3399-AC	1
or	405 035 0801	TR DTC144-ES-TP	1
Q707	405 003 7603	TR 2SA1345-AC	1
or	405 068 4609	TR DTA144-ES-TP	1
Q708	405 003 7603	TR 2SA1345-AC	1
or	405 068 4609	TR DTA144-ES-TP	1
Q709	405 019 3804	TR 2SC536-G-NP-AA	1
or	405 019 2708	TR 2SC536-F-NP-AA	1
Q710	405 019 3804	TR 2SC536-G-NP-AA	1
or	405 019 2708	TR 2SC536-F-NP-AA	1
Q711	405 019 3804	TR 2SC536-G-NP-AA	1
or	405 019 2708	TR 2SC536-F-NP-AA	1
Q712	405 004 4502	TR 2SA608-F-NP-AA	1
or	405 004 3901	TR 2SA608-E-NP-AA	1
Q713	405 004 4502	TR 2SA608-F-NP-AA	1
or	405 004 3901	TR 2SA608-E-NP-AA	1
Q714	405 019 3804	TR 2SC536-G-NP-AA	1
or	405 019 2708	TR 2SC536-F-NP-AA	1
D701	407 028 9105	LED SLP-173B-50	1
D702	407 031 5705	LED SLP-273B-50	1
D703	407 031 5705	LED SLP-273B-50	1
D704	407 031 5705	LED SLP-273B-50	1
D705	407 031 5705	LED SLP-273B-50	1
D706	407 031 5705	LED SLP-273B-50	1
D707	407 031 5705	LED SLP-273B-50	1
D711	407 102 7706	LED SEL2813A	1
D712	407 028 9105	LED SLP-173B-50	1
D713	407 005 3805	DIODE DS442-BT	1
D721	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D723	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D724	407 005 3805	DIODE DS442-BT	1
D725	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D726	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D727	407 028 9105	LED SLP-173B-50	1
D728	407 005 3805	DIODE DS442-BT	1
C701	403 001 1906	CERAMIC 0.01U M 16V	1
C702	404 039 4402	ELECT 100U M 10V	1
C703	403 069 1504	CERAMIC 1000P K 50V	1
C705	403 001 1906	CERAMIC 0.01U M 16V	1
C706	403 057 2100	POLYESTER 0.1U J 50V	1
or	403 057 3503	POLYESTER 0.1U K 50V	1
C707	403 049 1708	ELECT 1U M 50V	1
C708	403 049 1708	ELECT 1U M 50V	1
C709	404 039 4303	ELECT 2200U M 10V	1
C710	403 073 7004	CERAMIC 470P K 50V	1
C711	403 038 7209	ELECT 220U M 6.3V	1
C714	403 038 2402	ELECT 100U M 6.3V	1
R701	401 020 0801	CARBON 470 JA 1/4W	1
R702	401 027 5007	CARBON 68 JA 1/6W	1
R703	401 016 2604	CARBON 220 JA 1/4W	1
R704	401 016 2604	CARBON 220 JA 1/4W	1
R707	401 026 3905	CARBON 330 JA 1/6W	1
R709	401 012 7009	CARBON 10K JA 1/4W	1
R710	401 012 7009	CARBON 10K JA 1/4W	1
R711	401 012 8105	CARBON 100K JA 1/4W	1
R712	401 012 8105	CARBON 100K JA 1/4W	1
R713	401 024 7400	CARBON 10K JA 1/6W	1
R714	401 027 0309	CARBON 47K JA 1/6W	1
R715	401 027 5908	CARBON 68K JA 1/6W	1
R716	401 027 5908	CARBON 68K JA 1/6W	1
R717	401 027 0309	CARBON 47K JA 1/6W	1
R718	401 024 7707	CARBON 100K JA 1/6W	1
R719	401 027 0507	CARBON 470K JA 1/6W	1
R720	401 024 7004	CARBON 1K JA 1/6W	1
R721	401 027 0309	CARBON 47K JA 1/6W	1
R722	401 026 4308	CARBON 3.3K JA 1/6W	1
R723	401 025 7805	CARBON 2.2K JA 1/6W	1
R724	401 025 0608	CARBON 1.3K JA 1/6W	1
R725	401 026 9600	CARBON 470 JA 1/6W	1
R726	401 027 0309	CARBON 47K JA 1/6W	1
R727	401 020 0801	CARBON 470 JA 1/4W	1
R728	401 020 0801	CARBON 470 JA 1/4W	1
R731	401 024 7707	CARBON 100K JA 1/6W	1
R732	401 024 7400	CARBON 10K JA 1/6W	1
ASSY,PCB,INPUT			
52	620 208 9560	Assy,PCB,Input	1
	620 205 2892	PCB,Input Connect.	1
	620 201 6146	Jack,RCA PIN,2P,WH/RE	1
	620 050 2450	Metal Mount Antenna	1
CN101	620 017 5067	Socket 13P	1
CN102	620 021 6548	Plug 2P	1
CN104	620 021 6555	Plug 4P	1
IC101	409 057 4403	IC UPC4570C	1
C101	403 071 6207	CERAMIC 220P K 50V	1
C102	403 071 6207	CERAMIC 220P K 50V	1
C103	403 051 2106	ELECT 4.7U M 50V	1
C104	403 051 2106	ELECT 4.7U M 50V	1
C105	403 071 6207	CERAMIC 220P K 50V	1
C106	403 071 6207	CERAMIC 220P K 50V	1
C107	403 068 9402	CERAMIC 100P K 50V	1
C108	403 068 9402	CERAMIC 100P K 50V	1
C109	403 059 0401	POLYESTER 0.018U K 50V	1
C110	403 059 0401	POLYESTER 0.018U K 50V	1
C111	403 061 8709	POLYESTER 4700P K 50V	1
C112	403 061 8709	POLYESTER 4700P K 50V	1
C113	403 044 0300	ELECT 47U M 16V	1
C114	403 044 0300	ELECT 47U M 16V	1
C115	403 051 2106	ELECT 4.7U M 50V	1
C116	403 051 2106	ELECT 4.7U M 50V	1
C117	403 047 4305	ELECT 47U M 25V	1
C118	403 047 4305	ELECT 47U M 25V	1
C119	403 143 2809	CERAMIC 0.047U Z 50V	1
R101	401 025 7805	CARBON 2.2K JA 1/6W	1
R102	401 025 7805	CARBON 2.2K JA 1/6W	1
R103	401 024 7707	CARBON 100K JA 1/6W	1
R104	401 024 7707	CARBON 100K JA 1/6W	1
R105	401 024 7707	CARBON 100K JA 1/6W	1
R106	401 024 7707	CARBON 100K JA 1/6W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R107	401 025 8703	CARBON 220K JA 1/6W	1
R108	401 025 8703	CARBON 220K JA 1/6W	1
R109	401 025 1902	CARBON 15K JA 1/6W	1
R110	401 025 1902	CARBON 15K JA 1/6W	1
R111	401 026 3905	CARBON 330 JA 1/6W	1
R112	401 026 3905	CARBON 330 JA 1/6W	1
R113	401 024 7707	CARBON 100K JA 1/6W	1
R114	401 024 7707	CARBON 100K JA 1/6W	1
R115	401 024 7004	CARBON 1K JA 1/6W	1
R116	401 024 7004	CARBON 1K JA 1/6W	1
R117	401 019 1000	CARBON 390 JA 1/4W	1
R118	401 019 1000	CARBON 390 JA 1/4W	1
R119	401 024 7004	CARBON 1K JA 1/6W	1
R120	401 026 9600	CARBON 470 JA 1/6W	1
R122	401 012 5708	CARBON 1K JA 1/4W	1
R123	401 012 5708	CARBON 1K JA 1/4W	1
R124	401 012 5708	CARBON 1K JA 1/4W	1
ASSY,PCB,FUSE			
53	620 208 9355	Assy,PCB,Fuse	1
⚠	423 005 0507	FUSE 250V T1A	2
⚠	423 007 4404	FUSE 250V T5A	2
	620 207 9158	Fuse Holder,Taping	8
	620 203 9909	Terminal,Wrapper,5P	1
ASSY,PCB,POWER SWITCH			
54	620 208 9379	Assy,PCB,Power Switch	1
	620 205 2953	PCB,Power Switch	1
	620 205 5091	Socket,Holder,6P	1
	620 199 4568	Jack,Headphone,3P, (D6.43)	1
	620 202 8033	Terminal,I-102NA,2P	1
⚠	620 209 4250	Switch,Push,1P-1T,TV-5	1
PC601	620 208 6590	Wire,Parallel,6P,L=270	1
SW601	620 188 8393	Push 1KEY (SP-A)	1
SW602	620 188 8393	Push 1KEY (SP-B)	1
R601	401 068 7701	OXIDE-MT 560 JB 2W	1
R602	401 068 7701	OXIDE-MT 560 JB 2W	1
R603	401 017 0807	CARBON 270 JA 1/4W	1
R604	401 017 0807	CARBON 270 JA 1/4W	1
R605	401 017 0807	CARBON 270 JA 1/4W	1
R606	401 017 0807	CARBON 270 JA 1/4W	1
ASSY,PCB,SPEAKER TERMINAL			
55	620 208 9386	Assy,PCB,Speaker Terminal	1
	620 185 1953	Push Terminal 8P	1
or	620 022 2952	Speaker 8P Terminal	1
	620 205 5091	Socket,Holder,6P	1
C601	403 069 1207	CERAMIC 1000P K 50V	1
C602	403 069 1207	CERAMIC 1000P K 50V	1
C603	403 069 1207	CERAMIC 1000P K 50V	1
C604	403 069 1207	CERAMIC 1000P K 50V	1
ASSY,PCB,MASTER VOLUME			
56	620 205 3059	Assy,PCB,Master Volume	1
	620 205 2922	PCB,Volume Connect	1
	620 209 9149	Lug,Earth	1
CN211	620 018 1860	Socket 8P	1
VR201	620 209 4199	VR,Rotary,2X100KA	1
ASSY,PCB,U-CON CONNECT			
57	620 205 3066	Assy,PCB,U-CON Connect	1
CN711	620 205 5411	Connector-P,9P	1
CN712	620 205 5350	Connector-P,6P	1
CN713	620 205 5350	Connector-P,6P	1
CN714	620 018 1877	Socket 9P	1
CN715	620 017 5050	Socket 6P	1
CN716	620 017 5050	Socket 6P	1
C712	403 049 1708	ELECT 1U M 50V	1
ASSY,PCB,MAIN AMPLIFIER			
58	620 208 9409	Assy,PCB,Main Amplifier	1
	620 022 2587	EC Terminal 1P	2
⚠	423 006 4702	FUSE 250V T2.5A	1
	411 020 8004	SCR S-TPG BRZ 3X8	5
	620 201 6153	Jack,RCA PIN,4P,WH/RE	2
	620 201 6160	Jack,RCA PIN,6P,WH/RE	1
	620 207 9158	Fuse Holder,Taping	2
	620 203 9909	Terminal,Wrapper,5P	1
	620 209 4212	Terminal,I-104NA,4P	1

Ref. No.	Part No.	Description	Q'ty
	620 207 0735	Terminal,Wrapper,4P,I-504	1
	620 200 6109	Relay,2P-1T 24VDC	1
	620 050 2450	Metal Mount Antenna	1
	620 053 9241	Plate Heat Sink	5
	620 055 1045	Label Fuse	1
	620 186 7275	Plate Earth	1
CN111	620 022 0811	Plug 13P	1
CN201	620 022 1924	Plug 8P	1
CN204	620 022 1931	Plug 9P	1
CN205	620 022 0828	Plug 6P	1
CN206	620 022 0828	Plug 6P	1
CN304	620 205 5930	Connector-P,6P,53114	1
CN305	620 205 5947	Connector-P,7P,53114	1
CN306	620 205 5947	Connector-P,7P,53114	1
L401	620 027 1240	AF Coil	1
L402	620 027 1240	AF Coil	1
RA201	620 004 5551	Resistor 3X10K J	1
R463	620 208 6675	Resistor,Cement 0.33X2 P	1
R464	620 208 6675	Resistor,Cement 0.33X2 P	1
VR401	620 006 1346	Potentiometer 220B	1
VR402	620 006 1346	Potentiometer 220B	1
IC201	409 109 5105	IC LC7821	1
IC202	409 070 7108	IC RC4558	1
IC203	409 161 3101	IC TC9214P	1
IC204	409 161 3101	IC TC9214P	1
IC301	409 070 7108	IC RC4558	1
IC401	409 018 5203	IC LA6462D	1
IC403	409 079 9509	IC LA2500	1
IC404	409 079 9509	IC LA2500	1
IC501	409 195 0503	IC NJM78M18FA	1
Q201	405 018 2501	TR 2SC3399-AC	1
or	405 035 0801	TR DTC144-ES-TP	1
Q301	405 010 9201	TR 2SC1570-G-NP-AA	1
or	405 010 9102	TR 2SC1570-F-NP-AA	1
Q302	405 010 9201	TR 2SC1570-G-NP-AA	1
or	405 010 9102	TR 2SC1570-F-NP-AA	1
Q303	405 010 9201	TR 2SC1570-G-NP-AA	1
or	405 010 9102	TR 2SC1570-F-NP-AA	1
Q304	405 010 9201	TR 2SC1570-G-NP-AA	1
or	405 010 9102	TR 2SC1570-F-NP-AA	1
Q305	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0101	TR 2SC3331-T-AA	1
Q306	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0101	TR 2SC3331-T-AA	1
Q307	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0101	TR 2SC3331-T-AA	1
Q308	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0101	TR 2SC3331-T-AA	1
Q309	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0101	TR 2SC3331-T-AA	1
Q310	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0101	TR 2SC3331-T-AA	1
Q401	405 039 5802	TR 2SC3792-AA	1
Q402	405 039 5802	TR 2SC3792-AA	1
Q403	405 016 9007	TR 2SC3066-G	1
or	405 016 8901	TR 2SC3066-F	1
Q404	405 016 9007	TR 2SC3066-G	1
or	405 016 8901	TR 2SC3066-F	1
Q405	405 002 9202	TR 2SA1209-T	1
or	405 002 9103	TR 2SA1209-S	1
Q406	405 002 9202	TR 2SA1209-T	1
or	405 002 9103	TR 2SA1209-S	1
Q407	405 016 4002	TR 2SC2911-T	1
or	405 016 3906	TR 2SC2911-S	1
Q408	405 016 4002	TR 2SC2911-T	1
or	405 016 3906	TR 2SC2911-S	1
Q409	405 019 2708	TR 2SC536-F-NP-AA	1
or	405 019 1909	TR 2SC536-E-NP-AA	1
Q410	405 019 2708	TR 2SC536-F-NP-AA	1
or	405 019 1909	TR 2SC536-E-NP-AA	1
Q411	405 004 4502	TR 2SA608-F-NP-AA	1
or	405 004 3901	TR 2SA608-E-NP-AA	1
Q412	405 004 4502	TR 2SA608-F-NP-AA	1
or	405 004 3901	TR 2SA608-E-NP-AA	1
Q415	405 017 2700	TR 2SC3117-T	1
or	405 017 2601	TR 2SC3117-S	1
Q416	405 017 2700	TR 2SC3117-T	1
or	405 017 2601	TR 2SC3117-S	1
Q417	405 003 1700	TR 2SA1249-T	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
or	405 003 1601	TR 2SA1249-S	1
Q418	405 003 1700	TR 2SA1249-T	1
or	405 003 1601	TR 2SA1249-S	1
Q423	405 003 7900	TR 2SA1348-AC	1
or	405 068 4609	TR DTA144-ES-TP	1
Q425	405 019 2807	TR 2SC536-F-SPA-AC	1
or	405 019 2005	TR 2SC536-E-SPA-AC	1
Q426	405 019 2807	TR 2SC536-F-SPA-AC	1
or	405 019 2005	TR 2SC536-E-SPA-AC	1
Q427	405 036 3108	TR 2SA1503-AC	1
or	405 100 9807	TR DTA123-YS-TP	1
Q428	405 019 2708	TR 2SC536-F-NP-AA	1
or	405 019 1909	TR 2SC536-E-NP-AA	1
Q503	405 023 8505	TR 2SD438-F-MP	1
or	405 023 8307	TR 2SD438-E-MP	1
Q506	405 007 5308	TR 2SB560-F-MP	1
or	405 007 5100	TR 2SB560-E-MP	1
D401	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D402	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D403	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D404	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D405	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D406	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D407	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D408	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D409	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D410	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D411	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D412	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D413	407 005 3805	DIODE DS442-BT	1
D414	407 005 3805	DIODE DS442-BT	1
D415	407 049 9504	ZENER DIODE GZA20Y-BT	1
D417	407 004 9709	DIODE DSK10C-BT	1
D505	407 088 3105	DIODE DSC30TC-KD2	1
D506	407 088 3105	DIODE DSC30TC-KD2	1
D507	407 088 3105	DIODE DSC30TC-KD2	1
D508	407 088 3105	DIODE DSC30TC-KD2	1
D509	407 004 9105	DIODE DSF10C-BT	1
D510	407 004 9105	DIODE DSF10C-BT	1
D511	407 004 9105	DIODE DSF10C-BT	1
D512	407 004 9105	DIODE DSF10C-BT	1
D516	407 049 7807	ZENER DIODE GZA18Y-BT	1
TH401	407 109 6702	THERMISTOR 300D-5	1
TH402	407 109 6702	THERMISTOR 300D-5	1
C201	403 071 6207	CERAMIC 220P K 50V	1
C202	403 071 6207	CERAMIC 220P K 50V	1
C203	403 071 6207	CERAMIC 220P K 50V	1
C204	403 071 6207	CERAMIC 220P K 50V	1
C205	403 071 6207	CERAMIC 220P K 50V	1
C206	403 071 6207	CERAMIC 220P K 50V	1
C207	403 071 6207	CERAMIC 220P K 50V	1
C208	403 071 6207	CERAMIC 220P K 50V	1
C209	403 071 6207	CERAMIC 220P K 50V	1
C210	403 071 6207	CERAMIC 220P K 50V	1
C211	403 071 6207	CERAMIC 220P K 50V	1

Ref. No.	Part No.	Description	Q'ty
C212	403 071 6207	CERAMIC 220P K 50V	1
C213	403 071 6207	CERAMIC 220P K 50V	1
C214	403 071 6207	CERAMIC 220P K 50V	1
C215	403 051 2106	ELECT 4.7U M 50V	1
C216	403 051 2106	ELECT 4.7U M 50V	1
C217	403 068 9402	CERAMIC 100P K 50V	1
C218	403 068 9402	CERAMIC 100P K 50V	1
C219	403 051 2106	ELECT 4.7U M 50V	1
C220	403 051 2106	ELECT 4.7U M 50V	1
C221	403 071 6207	CERAMIC 220P K 50V	1
C222	403 071 6207	CERAMIC 220P K 50V	1
C223	403 062 0900	POLYESTER 0.047U K 50V	1
or	403 062 0801	POLYESTER 0.047U K 50V	1
C224	403 062 0900	POLYESTER 0.047U K 50V	1
or	403 062 0801	POLYESTER 0.047U K 50V	1
C225	403 047 4305	ELECT 47U M 25V	1
C226	403 047 4305	ELECT 47U M 25V	1
C227	403 049 1708	ELECT 1U M 50V	1
C230	403 073 7004	CERAMIC 470P K 50V	1
C231	403 044 0300	ELECT 47U M 16V	1
C232	403 044 0300	ELECT 47U M 16V	1
C301	403 050 1308	ELECT 2.2U M 50V	1
C302	403 050 1308	ELECT 2.2U M 50V	1
C303	403 048 7701	ELECT 0.47U M 50V	1
C304	403 048 7701	ELECT 0.47U M 50V	1
C305	403 063 7809	POLYESTER 0.082U K 50V	1
C306	403 063 7809	POLYESTER 0.082U K 50V	1
C307	403 003 3700	CERAMIC 0.022U Z 25V	1
C308	403 003 3700	CERAMIC 0.022U Z 25V	1
C309	403 001 7601	CERAMIC 4700P M 16V	1
C310	403 001 7601	CERAMIC 4700P M 16V	1
C311	403 003 0600	CERAMIC 0.018U K 25V	1
C312	403 003 0600	CERAMIC 0.018U K 25V	1
C313	403 001 9704	CERAMIC 8200P M 16V	1
C314	403 001 9704	CERAMIC 8200P M 16V	1
C315	403 001 7601	CERAMIC 4700P M 16V	1
C316	403 001 7601	CERAMIC 4700P M 16V	1
C317	403 001 4006	CERAMIC 1500P M 16V	1
C318	403 001 4006	CERAMIC 1500P M 16V	1
C319	403 074 9205	CERAMIC 680P K 50V	1
C320	403 074 9205	CERAMIC 680P K 50V	1
C321	403 051 2106	ELECT 4.7U M 50V	1
C322	403 051 2106	ELECT 4.7U M 50V	1
C323	403 071 6207	CERAMIC 220P K 50V	1
C324	403 071 6207	CERAMIC 220P K 50V	1
C325	403 068 9402	CERAMIC 100P K 50V	1
C326	403 068 9402	CERAMIC 100P K 50V	1
C327	403 009 1809	CERAMIC 10P J 50V	1
C328	403 009 1809	CERAMIC 10P J 50V	1
C329	403 051 2106	ELECT 4.7U M 50V	1
C330	403 051 2106	ELECT 4.7U M 50V	1
C331	403 047 4305	ELECT 47U M 25V	1
C332	403 047 4305	ELECT 47U M 25V	1
C401	403 051 2106	ELECT 4.7U M 50V	1
C402	403 051 2106	ELECT 4.7U M 50V	1
C403	403 071 6207	CERAMIC 220P K 50V	1
C404	403 071 6207	CERAMIC 220P K 50V	1
C405	403 068 9402	CERAMIC 100P K 50V	1
C406	403 068 9402	CERAMIC 100P K 50V	1
C407	403 068 9402	CERAMIC 100P K 50V	1
C408	403 068 9402	CERAMIC 100P K 50V	1
C409	403 038 2402	ELECT 100U M 6.3V	1
C410	403 038 2402	ELECT 100U M 6.3V	1
C411	403 051 2106	ELECT 4.7U M 50V	1
C412	403 051 2106	ELECT 4.7U M 50V	1
C415	403 051 2106	ELECT 4.7U M 50V	1
C416	403 051 2106	ELECT 4.7U M 50V	1
C417	403 047 4305	ELECT 47U M 25V	1
C418	403 047 4305	ELECT 47U M 25V	1
C419	403 071 6207	CERAMIC 220P K 50V	1
C420	403 071 6207	CERAMIC 220P K 50V	1
C421	403 071 6207	CERAMIC 220P K 50V	1
C422	403 071 6207	CERAMIC 220P K 50V	1
C423	403 071 6207	CERAMIC 220P K 50V	1
C424	403 071 6207	CERAMIC 220P K 50V	1
C425	403 046 4603	ELECT 33U M 25V	1
C426	403 046 4603	ELECT 33U M 25V	1
C427	403 025 7304	CERAMIC 4.7P K 50V	1
C428	403 025 7304	CERAMIC 4.7P K 50V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description			Q'ty
C429	403 035 2207	CERAMIC	15P	K 500V	1
C430	403 035 2207	CERAMIC	15P	K 500V	1
C433	403 061 8709	POLYESTER	4700P	K 50V	1
or	403 061 8501	POLYESTER	4700P	K 50V	1
C434	403 061 8709	POLYESTER	4700P	K 50V	1
or	403 061 8501	POLYESTER	4700P	K 50V	1
C435	403 052 2808	ELECT	33U	M 63V	1
C436	403 052 2808	ELECT	33U	M 63V	1
C437	403 052 2808	ELECT	33U	M 63V	1
C438	403 052 2808	ELECT	33U	M 63V	1
C439	403 049 1708	ELECT	1U	M 50V	1
C440	403 049 1708	ELECT	1U	M 50V	1
C441	403 049 1708	ELECT	1U	M 50V	1
C442	403 049 1708	ELECT	1U	M 50V	1
C443	403 034 9900	CERAMIC	100P	K 500V	1
C444	403 034 9900	CERAMIC	100P	K 500V	1
C445	403 034 9900	CERAMIC	100P	K 500V	1
C446	403 034 9900	CERAMIC	100P	K 500V	1
C447	403 062 0900	POLYESTER	0.047U	K 50V	1
or	403 062 0801	POLYESTER	0.047U	K 50V	1
C448	403 062 0900	POLYESTER	0.047U	K 50V	1
or	403 062 0801	POLYESTER	0.047U	K 50V	1
C449	403 049 5508	ELECT	10U	M 50V	1
C450	403 051 2106	ELECT	4.7U	M 50V	1
C451	403 038 2402	ELECT	100U	M 6.3V	1
C453	403 034 8101	CERAMIC	1P	C 500V	1
C454	403 034 8101	CERAMIC	1P	C 500V	1
C502	403 177 3902	CERAMIC	0.01U	Z 500V	1
C503	403 177 3902	CERAMIC	0.01U	Z 500V	1
C511	404 043 0001	ELECT	6800U	M 63V	1
C512	404 043 0001	ELECT	6800U	M 63V	1
C513	403 052 9609	ELECT	1000U	M 35V	1
C514	403 054 2608	ELECT	470U	M 35V	1
C516	403 047 4305	ELECT	47U	M 25V	1
C518	403 051 2106	ELECT	4.7U	M 50V	1
C520	403 051 2106	ELECT	4.7U	M 50V	1
C521	403 047 4305	ELECT	47U	M 25V	1
R201	401 024 7004	CARBON	1K	JA 1/6W	1
R202	401 024 7004	CARBON	1K	JA 1/6W	1
R205	401 024 7004	CARBON	1K	JA 1/6W	1
R206	401 024 7004	CARBON	1K	JA 1/6W	1
R209	401 024 7004	CARBON	1K	JA 1/6W	1
R210	401 024 7004	CARBON	1K	JA 1/6W	1
R213	401 024 7004	CARBON	1K	JA 1/6W	1
R214	401 024 7004	CARBON	1K	JA 1/6W	1
R217	401 024 7004	CARBON	1K	JA 1/6W	1
R218	401 024 7004	CARBON	1K	JA 1/6W	1
R221	401 024 7004	CARBON	1K	JA 1/6W	1
R222	401 024 7004	CARBON	1K	JA 1/6W	1
R225	401 024 7004	CARBON	1K	JA 1/6W	1
R226	401 024 7004	CARBON	1K	JA 1/6W	1
R229	401 024 7707	CARBON	100K	JA 1/6W	1
R230	401 024 7707	CARBON	100K	JA 1/6W	1
R231	401 024 7707	CARBON	100K	JA 1/6W	1
R232	401 024 7707	CARBON	100K	JA 1/6W	1
R233	401 025 8703	CARBON	220K	JA 1/6W	1
R234	401 025 8703	CARBON	220K	JA 1/6W	1
R235	401 024 7004	CARBON	1K	JA 1/6W	1
R236	401 024 7004	CARBON	1K	JA 1/6W	1
R237	401 022 3107	CARBON	6.8K	JA 1/4W	1
R238	401 027 5502	CARBON	6.8K	JA 1/6W	1
R239	401 012 7009	CARBON	10K	JA 1/4W	1
R240	401 012 7009	CARBON	10K	JA 1/4W	1
R241	401 024 7400	CARBON	10K	JA 1/6W	1
R242	401 027 0309	CARBON	47K	JA 1/6W	1
R243	401 027 0507	CARBON	470K	JA 1/6W	1
R245	401 019 1000	CARBON	390	JA 1/4W	1
R246	401 019 1000	CARBON	390	JA 1/4W	1
R301	401 024 9305	CARBON	1.2K	JA 1/6W	1
R302	401 024 9305	CARBON	1.2K	JA 1/6W	1
R303	401 024 9305	CARBON	1.2K	JA 1/6W	1
R304	401 024 9305	CARBON	1.2K	JA 1/6W	1
R305	401 025 1605	CARBON	1.5K	JA 1/6W	1
R306	401 025 1605	CARBON	1.5K	JA 1/6W	1
R307	401 025 1605	CARBON	1.5K	JA 1/6W	1
R308	401 025 1605	CARBON	1.5K	JA 1/6W	1
R309	401 025 1605	CARBON	1.5K	JA 1/6W	1
R310	401 025 1605	CARBON	1.5K	JA 1/6W	1
R311	401 025 2305	CARBON	150K	JA 1/6W	1
R312	401 025 2305	CARBON	150K	JA 1/6W	1
R313	401 024 7707	CARBON	100K	JA 1/6W	1
R314	401 024 7707	CARBON	100K	JA 1/6W	1
R315	401 026 7408	CARBON	39K	JA 1/6W	1
R316	401 026 7408	CARBON	39K	JA 1/6W	1
R317	401 026 4605	CARBON	33K	JA 1/6W	1
R318	401 026 4605	CARBON	33K	JA 1/6W	1
R319	401 025 8208	CARBON	22K	JA 1/6W	1
R320	401 025 8208	CARBON	22K	JA 1/6W	1
R321	401 026 6609	CARBON	390	JA 1/6W	1
R322	401 026 6609	CARBON	390	JA 1/6W	1
R323	401 026 6609	CARBON	390	JA 1/6W	1
R324	401 026 6609	CARBON	390	JA 1/6W	1
R325	401 026 6609	CARBON	390	JA 1/6W	1
R326	401 026 6609	CARBON	390	JA 1/6W	1
R327	401 026 6609	CARBON	390	JA 1/6W	1
R328	401 026 6609	CARBON	390	JA 1/6W	1
R329	401 026 6609	CARBON	390	JA 1/6W	1
R330	401 026 6609	CARBON	390	JA 1/6W	1
R331	401 027 8602	CARBON	8.2K	JA 1/6W	1
R332	401 027 8602	CARBON	8.2K	JA 1/6W	1
R333	401 027 8602	CARBON	8.2K	JA 1/6W	1
R334	401 027 8602	CARBON	8.2K	JA 1/6W	1
R335	401 027 8602	CARBON	8.2K	JA 1/6W	1
R336	401 027 8602	CARBON	8.2K	JA 1/6W	1
R337	401 027 8602	CARBON	8.2K	JA 1/6W	1
R338	401 027 8602	CARBON	8.2K	JA 1/6W	1
R339	401 027 8602	CARBON	8.2K	JA 1/6W	1
R340	401 027 8602	CARBON	8.2K	JA 1/6W	1
R341	401 025 8703	CARBON	220K	JA 1/6W	1
R342	401 025 8703	CARBON	220K	JA 1/6W	1
R343	401 025 8703	CARBON	220K	JA 1/6W	1
R344	401 025 8703	CARBON	220K	JA 1/6W	1
R345	401 026 9907	CARBON	4.7K	JA 1/6W	1
R346	401 026 9907	CARBON	4.7K	JA 1/6W	1
R347	401 026 9907	CARBON	4.7K	JA 1/6W	1
R348	401 026 9907	CARBON	4.7K	JA 1/6W	1
R353	401 016 2208	CARBON	220	JA 1/4W	1
R354	401 016 2208	CARBON	220	JA 1/4W	1
R401	401 012 5708	CARBON	1K	JA 1/4W	1
R402	401 012 5708	CARBON	1K	JA 1/4W	1
R403	401 025 8703	CARBON	220K	JA 1/6W	1
R404	401 025 8703	CARBON	220K	JA 1/6W	1
R405	401 025 4606	CARBON	18K	JA 1/6W	1
R406	401 025 4606	CARBON	18K	JA 1/6W	1
R407	401 025 4200	CARBON	1.8K	JA 1/6W	1
R408	401 025 4200	CARBON	1.8K	JA 1/6W	1
R409	401 026 4308	CARBON	3.3K	JA 1/6W	1
R410	401 026 4308	CARBON	3.3K	JA 1/6W	1
R411	401 024 7707	CARBON	100K	JA 1/6W	1
R412	401 024 7707	CARBON	100K	JA 1/6W	1
R413	401 019 1901	CARBON	3.9K	JA 1/4W	1
R414	401 019 1901	CARBON	3.9K	JA 1/4W	1
R415	401 024 7004	CARBON	1K	JA 1/6W	1
R416	401 024 7004	CARBON	1K	JA 1/6W	1
R417	401 019 1000	CARBON	390	JA 1/4W	1
R418	401 019 1000	CARBON	390	JA 1/4W	1
R419	401 027 5908	CARBON	68K	JA 1/6W	1
R420	401 027 5908	CARBON	68K	JA 1/6W	1
R421	401 016 3809	CARBON	2.2K	JA 1/4W	1
R422	401 016 3809	CARBON	2.2K	JA 1/4W	1
R423	401 016 3809	CARBON	2.2K	JA 1/4W	1
R424	401 016 3809	CARBON	2.2K	JA 1/4W	1
R425	401 014 5201	CARBON	15K	JA 1/4W	1
R426	401 014 5201	CARBON	15K	JA 1/4W	1
R427	401 026 5800	CARBON	3.6K	JA 1/6W	1
R428	401 026 5800	CARBON	3.6K	JA 1/6W	1
R429	401 027 5908	CARBON	68K	JA 1/6W	1
R430	401 027 5908	CARBON	68K	JA 1/6W	1
R431	402 037 1201	FUSIBLE RES	82	JA 1/4W	1
R432	402 037 1201	FUSIBLE RES	82	JA 1/4W	1
R433	402 037 1201	FUSIBLE RES	82	JA 1/4W	1
R434	402 037 1201	FUSIBLE RES	82	JA 1/4W	1
R435	401 021 3009	CARBON	5.6K	JA 1/4W	1
R436	401 021 3009	CARBON	5.6K	JA 1/4W	1
R437	402 037 1300	FUSIBLE RES	47	JA 1/4W	1
R438	402 037 1300	FUSIBLE RES	47	JA 1/4W	1
R439	402 037 1300	FUSIBLE RES	47	JA 1/4W	1
R440	402 037 1300	FUSIBLE RES	47	JA 1/4W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description		Q'ty
R441	402 037 1300	FUSIBLE RES	47 JA 1/4W	1
R442	402 037 1300	FUSIBLE RES	47 JA 1/4W	1
R443	402 037 1300	FUSIBLE RES	47 JA 1/4W	1
R444	402 037 1300	FUSIBLE RES	47 JA 1/4W	1
R445	401 017 9800	CARBON	30K JA 1/4W	1
R446	401 019 3004	CARBON	39K JA 1/4W	1
R447	401 019 3004	CARBON	39K JA 1/4W	1
R448	401 017 9800	CARBON	30K JA 1/4W	1
R449	402 015 3203	FUSIBLE RES	1K J- 1/4W	1
R450	402 015 3203	FUSIBLE RES	1K J- 1/4W	1
R451	402 015 3203	FUSIBLE RES	1K J- 1/4W	1
R452	402 015 3203	FUSIBLE RES	1K J- 1/4W	1
R453	401 024 6700	CARBON	100 JA 1/6W	1
R454	401 024 6700	CARBON	100 JA 1/6W	1
R455	401 026 3905	CARBON	330 JA 1/6W	1
R456	401 026 3905	CARBON	330 JA 1/6W	1
R457	401 061 2604	OXIDE-MT	330 JB 1W	1
or	402 039 9403	OXIDE-MT	330 JB 1W	1
R458	401 061 2604	OXIDE-MT	330 JB 1W	1
or	402 039 9403	OXIDE-MT	330 JB 1W	1
R459	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R460	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R461	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R462	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R465	401 019 6203	CARBON	4.7 JA 1/4W	1
R466	401 019 6203	CARBON	4.7 JA 1/4W	1
R467	401 064 6203	OXIDE-MT	10 JB 2W	1
or	402 039 5900	OXIDE-MT	10 JB 2W	1
R468	401 064 6203	OXIDE-MT	10 JB 2W	1
or	402 039 5900	OXIDE-MT	10 JB 2W	1
R469	401 026 7408	CARBON	39K JA 1/6W	1
R470	401 026 7408	CARBON	39K JA 1/6W	1
R471	401 099 1600	OXIDE-MT	6.8K JB 1W	1
or	402 039 8406	OXIDE-MT	6.8K JB 1W	1
R472	401 025 8208	CARBON	22K JA 1/6W	1
R473	401 027 5502	CARBON	6.8K JA 1/6W	1
R474	401 024 7004	CARBON	1K JA 1/6W	1
R476	401 026 7002	CARBON	3.9K JA 1/6W	1
R478	401 020 2003	CARBON	4.7K JA 1/4W	1
R479	401 026 9907	CARBON	4.7K JA 1/6W	1
R481	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R482	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R483	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R484	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R504	401 066 6003	OXIDE-MT	220 JB 2W	1
or	402 040 2004	OXIDE-MT	220 JB 2W	1
R505	401 014 4105	CARBON	1.5K JA 1/4W	1
R506	401 023 1706	CARBON	820 JA 1/4W	1
R511	401 023 1706	CARBON	820 JA 1/4W	1
R512	401 056 2909	OXIDE-MT	47 JB 1/2W	1
or	402 040 3506	OXIDE-MT	47 JB 1/2W	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. *Ordering quantity of screws and resistors must be multiple of* 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety *can be of special significance. When replacing a component identified with* ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or *resistance measurements must be made to determine that exposed* parts are acceptably insulated from the supply circuit before returning the product to the customer.

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C429	403 035 2207	CERAMIC	15P	K	500V	1
C430	403 035 2207	CERAMIC	15P	K	500V	1
C433	403 061 8709	POLYESTER	4700P	K	50V	1
or	403 061 8501	POLYESTER	4700P	K	50V	1
C434	403 061 8709	POLYESTER	4700P	K	50V	1
or	403 061 8501	POLYESTER	4700P	K	50V	1
C435	403 052 2808	ELECT	33U	M	63V	1
C436	403 052 2808	ELECT	33U	M	63V	1
C437	403 052 2808	ELECT	33U	M	63V	1
C438	403 052 2808	ELECT	33U	M	63V	1
C439	403 049 1708	ELECT	1U	M	50V	1
C440	403 049 1708	ELECT	1U	M	50V	1
C441	403 049 1708	ELECT	1U	M	50V	1
C442	403 049 1708	ELECT	1U	M	50V	1
C443	403 034 9900	CERAMIC	100P	K	500V	1
C444	403 034 9900	CERAMIC	100P	K	500V	1
C445	403 034 9900	CERAMIC	100P	K	500V	1
C446	403 034 9900	CERAMIC	100P	K	500V	1
C447	403 062 0900	POLYESTER	0.047U	K	50V	1
or	403 062 0801	POLYESTER	0.047U	K	50V	1
C448	403 062 0900	POLYESTER	0.047U	K	50V	1
or	403 062 0801	POLYESTER	0.047U	K	50V	1
C449	403 049 5508	ELECT	10U	M	50V	1
C450	403 051 2106	ELECT	4.7U	M	50V	1
C451	403 038 2402	ELECT	100U	M	6.3V	1
C453	403 034 8101	CERAMIC	1P	C	500V	1
C454	403 034 8101	CERAMIC	1P	C	500V	1
C502	403 177 3902	CERAMIC	0.01U	Z	500V	1
C503	403 177 3902	CERAMIC	0.01U	Z	500V	1
C511	404 043 0001	ELECT	6800U	M	63V	1
C512	404 043 0001	ELECT	6800U	M	63V	1
C513	403 052 9609	ELECT	1000U	M	35V	1
C514	403 054 2608	ELECT	470U	M	35V	1
C516	403 047 4305	ELECT	47U	M	25V	1
C518	403 051 2106	ELECT	4.7U	M	50V	1
C520	403 051 2106	ELECT	4.7U	M	50V	1
C521	403 047 4305	ELECT	47U	M	25V	1
R201	401 024 7004	CARBON	1K	JA	1/6W	1
R202	401 024 7004	CARBON	1K	JA	1/6W	1
R205	401 024 7004	CARBON	1K	JA	1/6W	1
R206	401 024 7004	CARBON	1K	JA	1/6W	1
R209	401 024 7004	CARBON	1K	JA	1/6W	1
R210	401 024 7004	CARBON	1K	JA	1/6W	1
R213	401 024 7004	CARBON	1K	JA	1/6W	1
R214	401 024 7004	CARBON	1K	JA	1/6W	1
R217	401 024 7004	CARBON	1K	JA	1/6W	1
R218	401 024 7004	CARBON	1K	JA	1/6W	1
R221	401 024 7004	CARBON	1K	JA	1/6W	1
R222	401 024 7004	CARBON	1K	JA	1/6W	1
R225	401 024 7004	CARBON	1K	JA	1/6W	1
R226	401 024 7004	CARBON	1K	JA	1/6W	1
R229	401 024 7707	CARBON	100K	JA	1/6W	1
R230	401 024 7707	CARBON	100K	JA	1/6W	1
R231	401 024 7707	CARBON	100K	JA	1/6W	1
R232	401 024 7707	CARBON	100K	JA	1/6W	1
R233	401 025 8703	CARBON	220K	JA	1/6W	1
R234	401 025 8703	CARBON	220K	JA	1/6W	1
R235	401 024 7004	CARBON	1K	JA	1/6W	1
R236	401 024 7004	CARBON	1K	JA	1/6W	1
R237	401 022 3107	CARBON	6.8K	JA	1/4W	1
R238	401 027 5502	CARBON	6.8K	JA	1/6W	1
R239	401 012 7009	CARBON	10K	JA	1/4W	1
R240	401 012 7009	CARBON	10K	JA	1/4W	1
R241	401 024 7400	CARBON	10K	JA	1/6W	1
R242	401 027 0309	CARBON	47K	JA	1/6W	1
R243	401 027 0507	CARBON	470K	JA	1/6W	1
R245	401 019 1000	CARBON	390	JA	1/4W	1
R246	401 019 1000	CARBON	390	JA	1/4W	1
R301	401 024 9305	CARBON	1.2K	JA	1/6W	1
R302	401 024 9305	CARBON	1.2K	JA	1/6W	1
R303	401 024 9305	CARBON	1.2K	JA	1/6W	1
R304	401 024 9305	CARBON	1.2K	JA	1/6W	1
R305	401 025 1605	CARBON	1.5K	JA	1/6W	1
R306	401 025 1605	CARBON	1.5K	JA	1/6W	1
R307	401 025 1605	CARBON	1.5K	JA	1/6W	1
R308	401 025 1605	CARBON	1.5K	JA	1/6W	1
R309	401 025 1605	CARBON	1.5K	JA	1/6W	1
R310	401 025 1605	CARBON	1.5K	JA	1/6W	1
R311	401 025 2305	CARBON	150K	JA	1/6W	1
R312	401 025 2305	CARBON	150K	JA	1/6W	1
R313	401 024 7707	CARBON	100K	JA	1/6W	1
R314	401 024 7707	CARBON	100K	JA	1/6W	1
R315	401 026 7408	CARBON	39K	JA	1/6W	1
R316	401 026 7408	CARBON	39K	JA	1/6W	1
R317	401 026 4605	CARBON	33K	JA	1/6W	1
R318	401 026 4605	CARBON	33K	JA	1/6W	1
R319	401 025 8208	CARBON	22K	JA	1/6W	1
R320	401 025 8208	CARBON	22K	JA	1/6W	1
R321	401 026 6609	CARBON	390	JA	1/6W	1
R322	401 026 6609	CARBON	390	JA	1/6W	1
R323	401 026 6609	CARBON	390	JA	1/6W	1
R324	401 026 6609	CARBON	390	JA	1/6W	1
R325	401 026 6609	CARBON	390	JA	1/6W	1
R326	401 026 6609	CARBON	390	JA	1/6W	1
R327	401 026 6609	CARBON	390	JA	1/6W	1
R328	401 026 6609	CARBON	390	JA	1/6W	1
R329	401 026 6609	CARBON	390	JA	1/6W	1
R330	401 026 6609	CARBON	390	JA	1/6W	1
R331	401 027 8602	CARBON	8.2K	JA	1/6W	1
R332	401 027 8602	CARBON	8.2K	JA	1/6W	1
R333	401 027 8602	CARBON	8.2K	JA	1/6W	1
R334	401 027 8602	CARBON	8.2K	JA	1/6W	1
R335	401 027 8602	CARBON	8.2K	JA	1/6W	1
R336	401 027 8602	CARBON	8.2K	JA	1/6W	1
R337	401 027 8602	CARBON	8.2K	JA	1/6W	1
R338	401 027 8602	CARBON	8.2K	JA	1/6W	1
R339	401 027 8602	CARBON	8.2K	JA	1/6W	1
R340	401 027 8602	CARBON	8.2K	JA	1/6W	1
R341	401 025 8703	CARBON	220K	JA	1/6W	1
R342	401 025 8703	CARBON	220K	JA	1/6W	1
R343	401 025 8703	CARBON	220K	JA	1/6W	1
R344	401 025 8703	CARBON	220K	JA	1/6W	1
R345	401 026 9907	CARBON	4.7K	JA	1/6W	1
R346	401 026 9907	CARBON	4.7K	JA	1/6W	1
R347	401 026 9907	CARBON	4.7K	JA	1/6W	1
R348	401 026 9907	CARBON	4.7K	JA	1/6W	1
R353	401 016 2208	CARBON	220	JA	1/4W	1
R354	401 016 2208	CARBON	220	JA	1/4W	1
R401	401 012 5708	CARBON	1K	JA	1/4W	1
R402	401 012 5708	CARBON	1K	JA	1/4W	1
R403	401 025 8703	CARBON	220K	JA	1/6W	1
R404	401 025 8703	CARBON	220K	JA	1/6W	1
R405	401 025 4606	CARBON	18K	JA	1/6W	1
R406	401 025 4606	CARBON	18K	JA	1/6W	1
R407	401 025 4200	CARBON	1.8K	JA	1/6W	1
R408	401 025 4200	CARBON	1.8K	JA	1/6W	1
R409	401 026 4308	CARBON	3.3K	JA	1/6W	1
R410	401 026 4308	CARBON	3.3K	JA	1/6W	1
R411	401 024 7707	CARBON	100K	JA	1/6W	1
R412	401 024 7707	CARBON	100K	JA	1/6W	1
R413	401 019 1901	CARBON	3.9K	JA	1/4W	1
R414	401 019 1901	CARBON	3.9K	JA	1/4W	1
R415	401 024 7004	CARBON	1K	JA	1/6W	1
R416	401 024 7004	CARBON	1K	JA	1/6W	1
R417	401 019 1000	CARBON	390	JA	1/4W	1
R418	401 019 1000	CARBON	390	JA	1/4W	1
R419	401 027 5908	CARBON	68K	JA	1/6W	1
R420	401 027 5908	CARBON	68K	JA	1/6W	1
R421	401 016 3809	CARBON	2.2K	JA	1/4W	1
R422	401 016 3809	CARBON	2.2K	JA	1/4W	1
R423	401 016 3809	CARBON	2.2K	JA	1/4W	1
R424	401 016 3809	CARBON	2.2K	JA	1/4W	1
R425	401 014 5201	CARBON	15K	JA	1/4W	1
R426	401 014 5201	CARBON	15K	JA	1/4W	1
R427	401 026 5800	CARBON	3.6K	JA	1/6W	1
R428	401 026 5800	CARBON	3.6K	JA	1/6W	1
R429	401 027 5908	CARBON	68K	JA	1/6W	1
R430	401 027 5908	CARBON	68K	JA	1/6W	1
R431	402 037 1201	FUSIBLE RES	82	JA	1/4W	1
R432	402 037 1201	FUSIBLE RES	82	JA	1/4W	1
R433	402 037 1201	FUSIBLE RES	82	JA	1/4W	1
R434	402 037 1201	FUSIBLE RES	82	JA	1/4W	1
R435	401 021 3009	CARBON	5.6K	JA	1/4W	1
R436	401 021 3009	CARBON	5.6K	JA	1/4W	1
R437	402 037 1300	FUSIBLE RES	47	JA	1/4W	1
R438	402 037 1300	FUSIBLE RES	47	JA	1/4W	1
R439	402 037 1300	FUSIBLE RES	47	JA	1/4W	1
R440	402 037 1300	FUSIBLE RES	47	JA	1/4W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description		Q'ty
R441	402 037 1300	FUSIBLE RES	47 JA 1/4W	1
R442	402 037 1300	FUSIBLE RES	47 JA 1/4W	1
R443	402 037 1300	FUSIBLE RES	47 JA 1/4W	1
R444	402 037 1300	FUSIBLE RES	47 JA 1/4W	1
R445	401 017 9800	CARBON	30K JA 1/4W	1
R446	401 019 3004	CARBON	39K JA 1/4W	1
R447	401 019 3004	CARBON	39K JA 1/4W	1
R448	401 017 9800	CARBON	30K JA 1/4W	1
R449	402 015 3203	FUSIBLE RES	1K J- 1/4W	1
R450	402 015 3203	FUSIBLE RES	1K J- 1/4W	1
R451	402 015 3203	FUSIBLE RES	1K J- 1/4W	1
R452	402 015 3203	FUSIBLE RES	1K J- 1/4W	1
R453	401 024 6700	CARBON	100 JA 1/6W	1
R454	401 024 6700	CARBON	100 JA 1/6W	1
R455	401 026 3905	CARBON	330 JA 1/6W	1
R456	401 026 3905	CARBON	330 JA 1/6W	1
R457	401 061 2604	OXIDE-MT	330 JB 1W	1
or	402 039 9403	OXIDE-MT	330 JB 1W	1
R458	401 061 2604	OXIDE-MT	330 JB 1W	1
or	402 039 9403	OXIDE-MT	330 JB 1W	1
R459	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R460	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R461	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R462	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R465	401 019 6203	CARBON	4.7 JA 1/4W	1
R466	401 019 6203	CARBON	4.7 JA 1/4W	1
R467	401 064 6203	OXIDE-MT	10 JB 2W	1
or	402 039 5900	OXIDE-MT	10 JB 2W	1
R468	401 064 6203	OXIDE-MT	10 JB 2W	1
or	402 039 5900	OXIDE-MT	10 JB 2W	1
R469	401 026 7408	CARBON	39K JA 1/6W	1
R470	401 026 7408	CARBON	39K JA 1/6W	1
R471	401 099 1600	OXIDE-MT	6.8K JB 1W	1
or	402 039 8406	OXIDE-MT	6.8K JB 1W	1
R472	401 025 8208	CARBON	22K JA 1/6W	1
R473	401 027 5502	CARBON	6.8K JA 1/6W	1
R474	401 024 7004	CARBON	1K JA 1/6W	1
R476	401 026 7002	CARBON	3.9K JA 1/6W	1
R478	401 020 2003	CARBON	4.7K JA 1/4W	1
R479	401 026 9907	CARBON	4.7K JA 1/6W	1
R481	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R482	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R483	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R484	402 037 1409	FUSIBLE RES	2.2 JA 1/4W	1
R504	401 066 6003	OXIDE-MT	220 JB 2W	1
or	402 040 2004	OXIDE-MT	220 JB 2W	1
R505	401 014 4105	CARBON	1.5K JA 1/4W	1
R506	401 023 1706	CARBON	820 JA 1/4W	1
R511	401 023 1706	CARBON	820 JA 1/4W	1
R512	401 056 2909	OXIDE-MT	47 JB 1/2W	1
or	402 040 3506	OXIDE-MT	47 JB 1/2W	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

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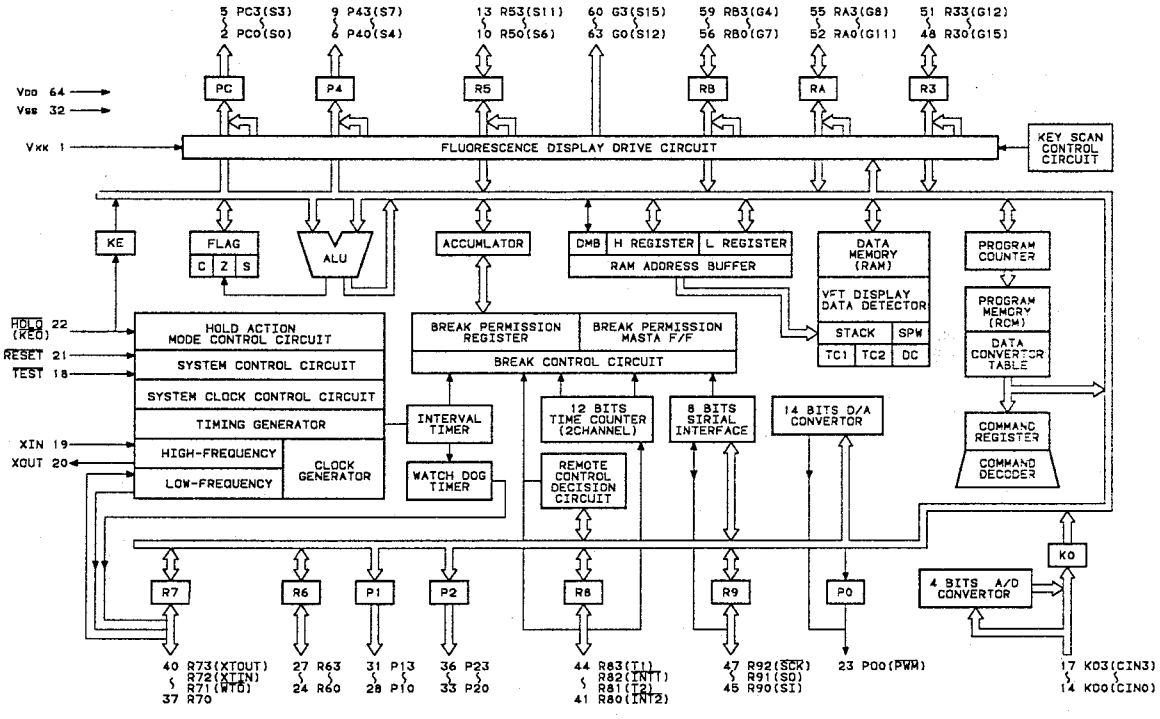
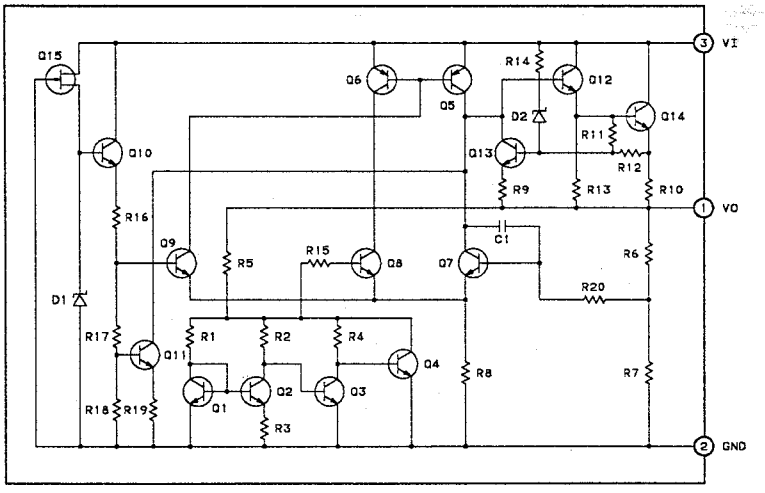
IC BLOCK DIAGRAM

IC701 TMP47C670N-1214 BLOCK DIAGRAM
(System Control Micon)

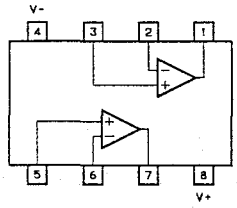


IC501 NJM78M18FA BLOCK DIAGRAM
(Constant Voltage Regulated Power Supply)

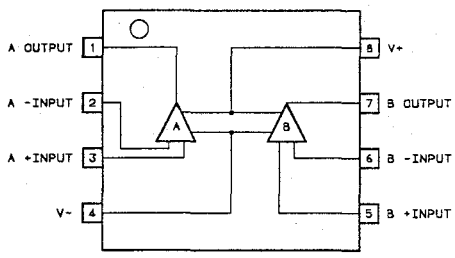


IC BLOCK DIAGRAM (Continued)

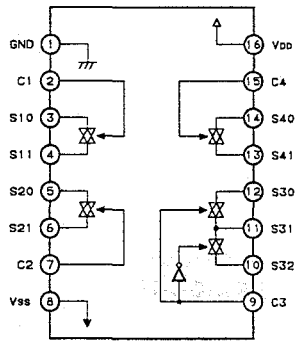
IC401 LA6462D BLOCK DIAGRAM
(Dual Operational Amp.)



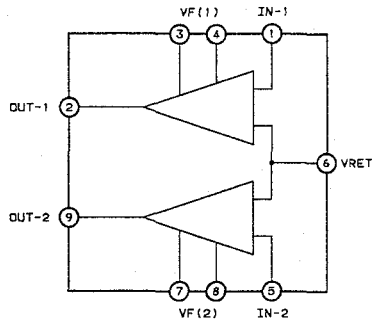
IC202 RC4558 BLOCK DIAGRAM
(Dual Operational Amp.)



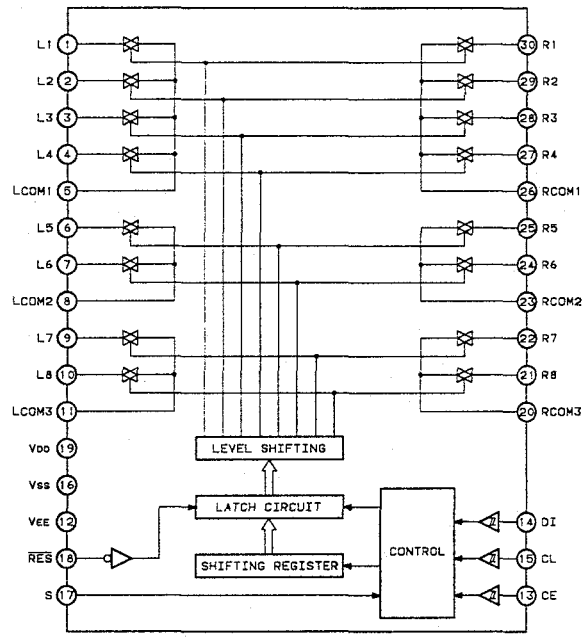
IC203/204 TC9214P BLOCK DIAGRAM
(Function Selector)



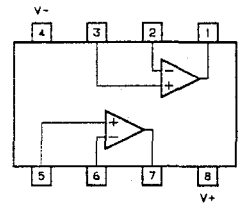
IC403/404 LA2500 BLOCK DIAGRAM
(Dual ClassA Bias Operational Amp.)



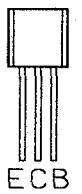
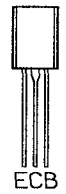
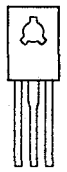
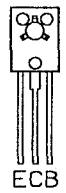
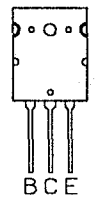
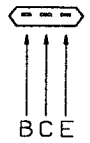
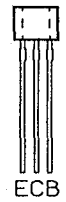
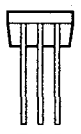
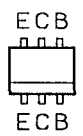
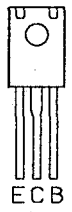
IC201 LC7821 BLOCK DIAGRAM
(Function Selector)



IC101 UPC4570C BLOCK DIAGRAM
(Dual Operational Amp.)



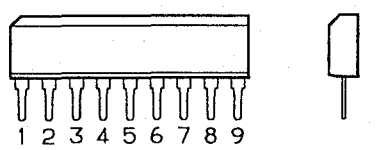
IC & TRANSISTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW	TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA608 2SC1570 2SC3331 2SC3792 2SC536			2SB560 2SD438		
2SA1209 2SC2911			2SA1249 2SC3117		
2SA1301 2SC3280			2SA1345 2SA1348 2SA1503 2SC3399 2SC536		
2SC3066			2SD1682		

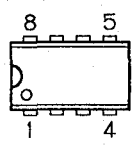
TERMINAL NAME

B → BASE
C → COLLECTOR
E → EMITTER
S → SOURCE
G → GATE
D → DRAIN

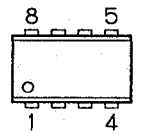
LA2500 FRONT/SIDE VIEWS



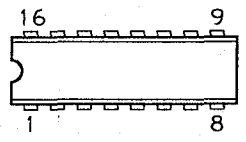
UPC4570C TOP VIEW



LA6462D TOP VIEW
RC4558 TOP VIEW

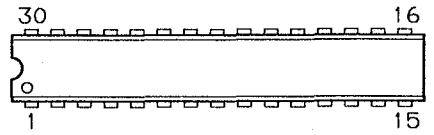


TC9214P TOP VIEW

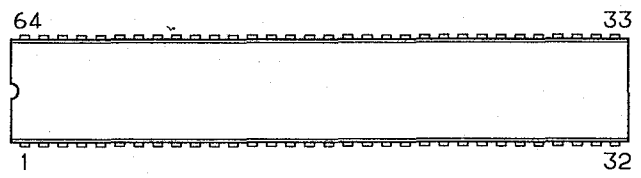


IC & TRANSISTOR LEAD IDENTIFICATION (Continued)

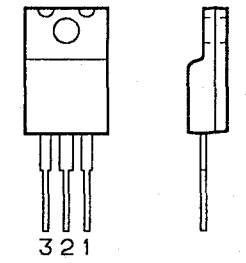
LC7821 TOP VIEW



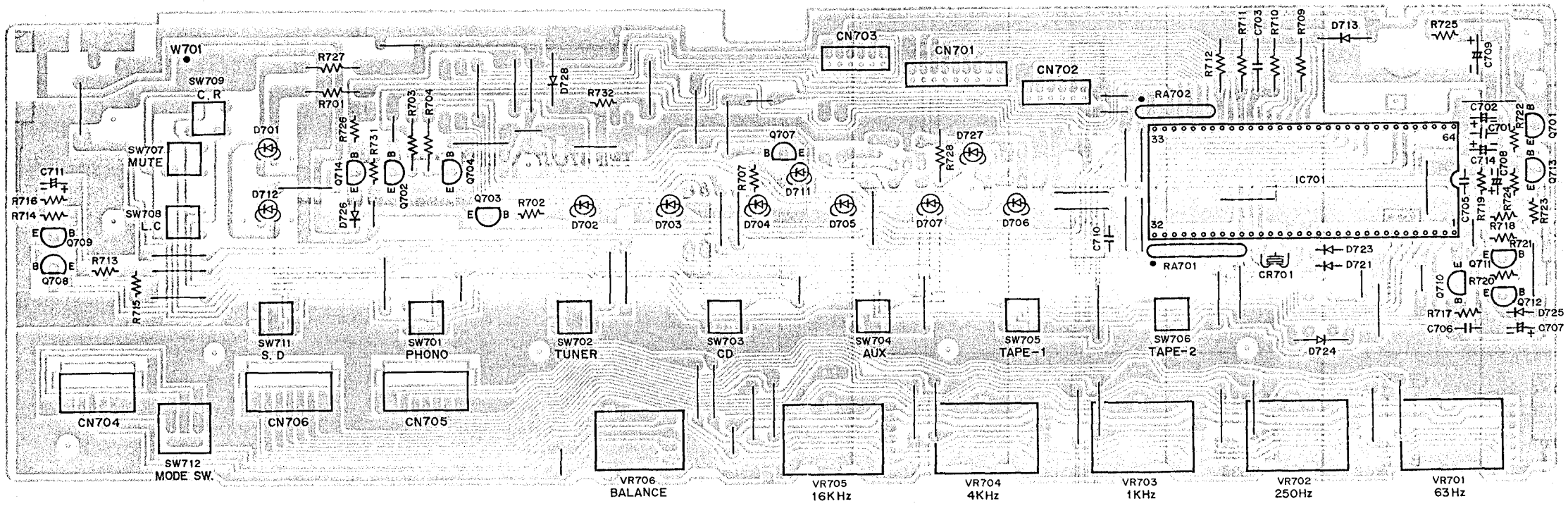
TMP47C670N-1214 TOP VIEW



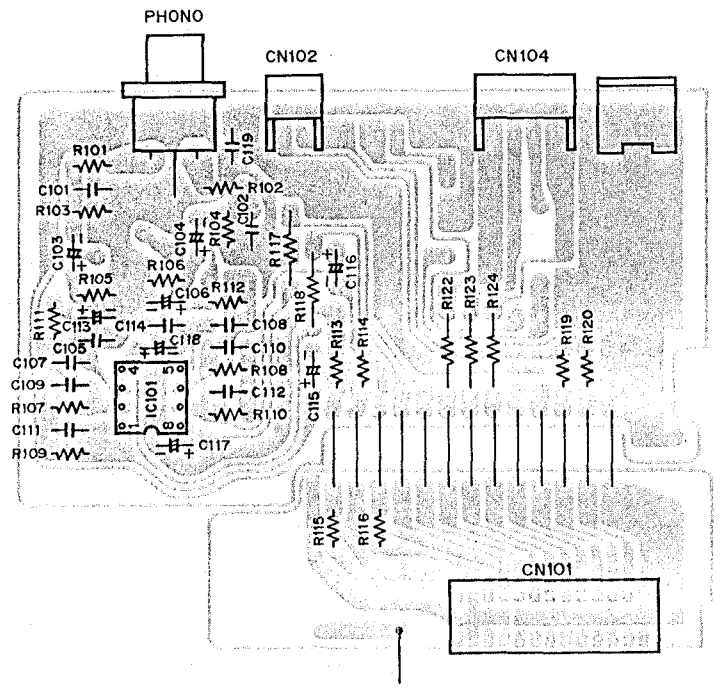
NJM78M18FA FRONT/SIDE VIEWS



U-COM PRINTED CIRCUIT BOARD
(BOTTOM VIEW)



INPUT PRINTED CIRCUIT BOARD
(BOTTOM VIEW)



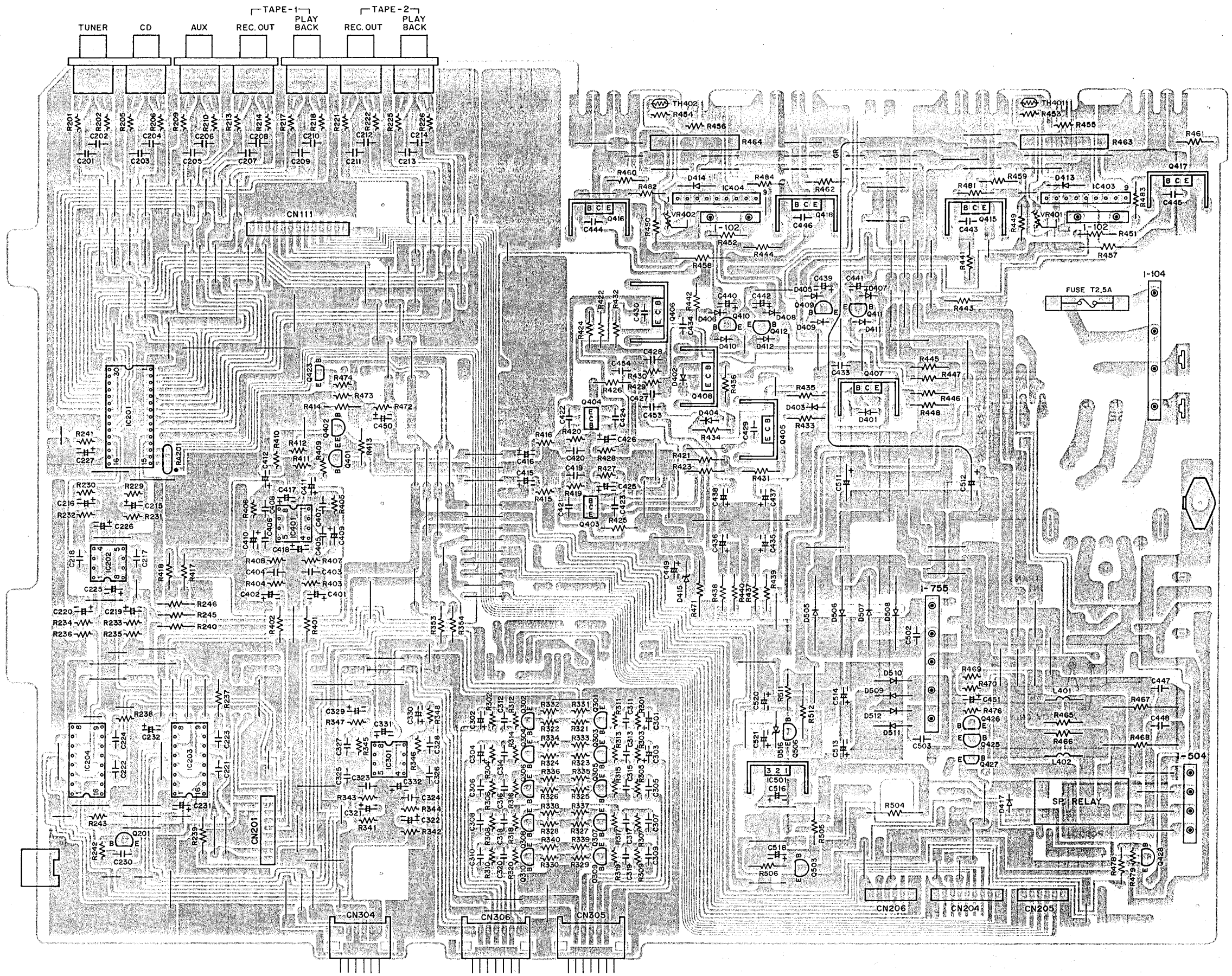
IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC101	UPC4570C	0V	0V	0V	−17.5V	0V	0V	0V	17.3V	–	–	–	–	–	–	–	–	–	–	–	–
IC201	LC7821	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	−17.4V	0V	0V	0V	0V	0V	17.2V	17.3V	0V
		21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
		0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	–	–	–	–	–	–	–	–	–	–
IC202	RC4558	0V	0V	0V	−17.5V	0V	0V	0V	17.3V	–	–	–	–	–	–	–	–	–	–	–	–
IC203,204	TC9214P	0V	4.6V	0V	0V	0V	0V	4.6V	−14.6V	0V	0V	0V	0V	0V	0V	0V	10.6V	–	–	–	–
IC301	RC4558	0V	0V	0V	−14.0V	0V	0V	0V	13.7V	–	–	–	–	–	–	–	–	–	–	–	–
IC401	LA6462D	0V	0V	0V	−16.3V	0V	0V	0V	16.1V	–	–	–	–	–	–	–	–	–	–	–	–
IC403,404	LA2500	1.1V	0.4V	1.0V	1.0V	−1.0V	0V	−0.5V	−0.5V	−0.3V	–	–	–	–	–	–	–	–	–	–	–
IC501	NJM78M18FA	26.5V	0V	18.1V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IC701	TMP47C870N	0V	0V	0V	0V	0V	0V	0.2V	0V	0V	1.2V	1.2V	1.2V	1.2V	0.1V	2.2V	0V	0V	0V	2.3V	2.3V
		21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
		4.8V	4.6V	0V	0V	0V	0V	0V	5.0V	5.0V	0V	0V	0V	4.6V	5.0V	0V	0V	5.0V	0V	5.0V	0V
		41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	***53***	***54***	***55***	***56***	***57***	***58***	***59***	***60***
		4.9V	0V	5.0V	0V	0V	0V	5.0V	4.8V	4.8V	0V	0V	0V	0V	3.8V	0V	0V	0V	0V	0V	0V
		61	***62***	***63***	***64***	***65***	***66***	***67***	***68***	***69***	**70**	**71**	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
		0V	0V	0V	4.9V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

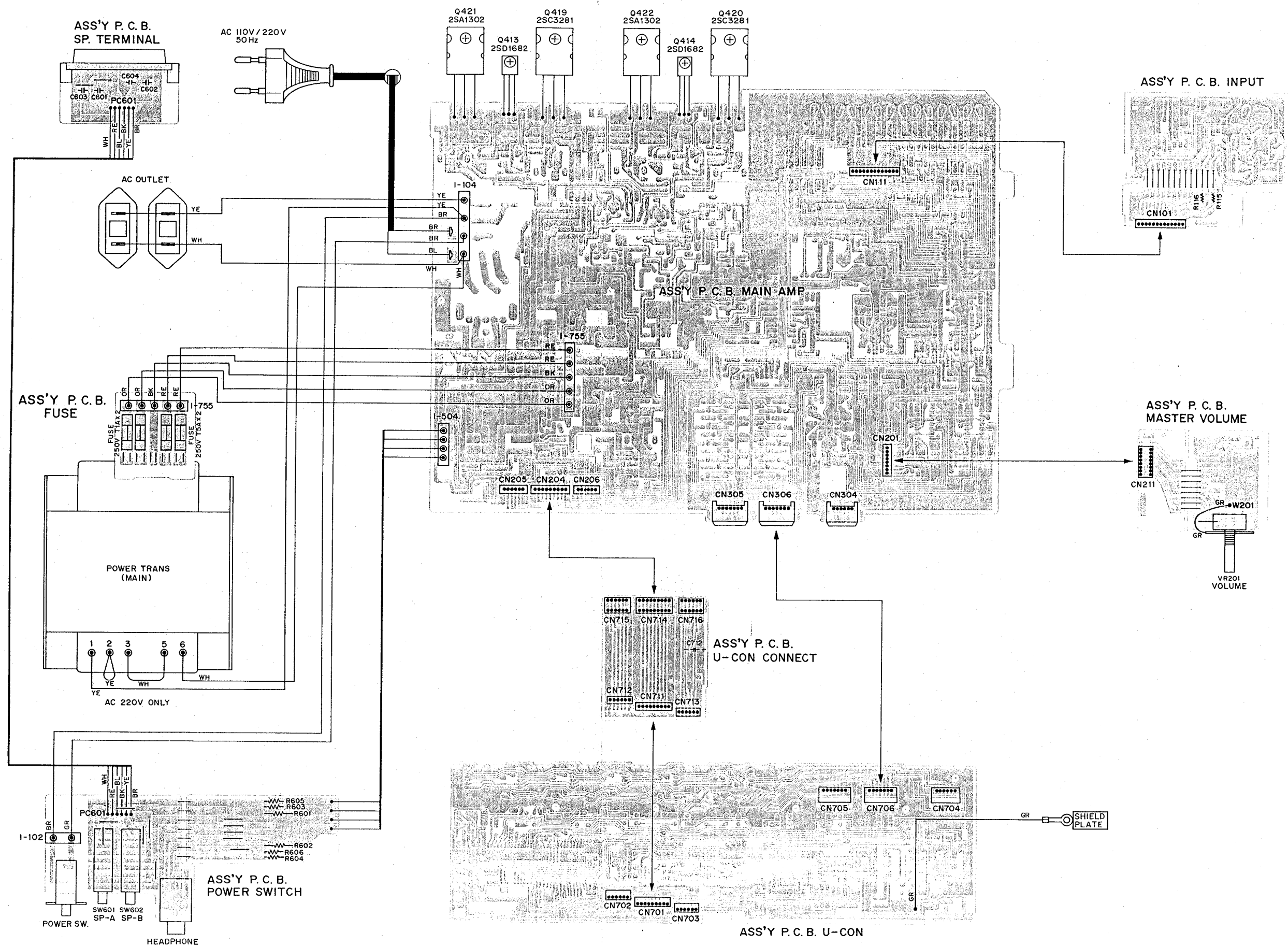
TRANSISTOR DC VOLTAGES

Ref. No.	DEVICE	B	C	E	Ref. No.	DEVICE	B	C	E	Ref. No.	DEVICE	B	C	E
Q201	2SC3399	2.7V	0V	0V	Q413,414	2SD1682	0.2V	0.3V	−0.3V	Q506	2SB560	−19.1V	−25.0V	−18.5V
Q301,302	2SC1570	−0.5V	13.1V	−1.1V	Q415,416	2SC3117	1.1V	68.0V	0.5V	Q701	2SC536	5.7V	4.9V	5.7V
Q303,304	2SC1570	−0.4V	13.1V	−1.0V	Q417,418	2SA1249	−1.0V	−69.0V	−0.5V	Q702	2SC3399	4.9V	0.1V	0V
Q305,306	2SC3331	−0.1V	13.1V	−0.7V	Q419,420	2SC3281	0.5V	68.1V	0V	Q703	2SC536	0.7V	0V	0V
Q307,308	2SC3331	−0.1V	13.1V	−0.7V	Q421,422	2SA1302	−0.5V	−68.1V	0V	Q704	2SC3399	0V	3.5V	0V
Q309,310	2SC3331	−0.1V	13.1V	−0.7V	Q423	2SA1348	5.0V	−4.3V	4.9V	Q707	2SA1345	4.6V	−0.2V	0V
Q401	2SC3792	−4.3V	0V	0V	Q425	2SC536	0V	5.0V	0V	Q708	2SA1345	0V	0.1V	0V
Q402	2SC3792	−4.3V	0V	0V	Q426	2SC536	0V	5.0V	0V	Q709	2SC536	0V	0V	0V
Q403,404	2SC3066	0V	66.3V	−0.6V	Q427	2SA1503	5.0V	0V	5.0V	Q710	2SC536	0.1V	0.9V	0V
Q405,406	2SA1209	65.3V	1.4V	66.1V	Q428	2SC536	0.7V	0V	0V	Q711	2SC536	0V	4.6V	0V
Q407,408	2SC2911	−65.4V	−1.4V	−66.1V	Q503	2SC536	5.5V	23.4V	4.9V	Q712	2SA608	5.7V	0V	5.4V
Q409,410	2SC536	0V	0.9V	0V	Q504	2SC536	0V	5.5V	0V	Q713	2SA608	4.9V	0V	2.1V
Q411,412	2SA608	0V	−0.9V	0V	Q505	2SD438	13.7V	25.8V	13.1V	Q714	2SC536	0V	3.5V	0V

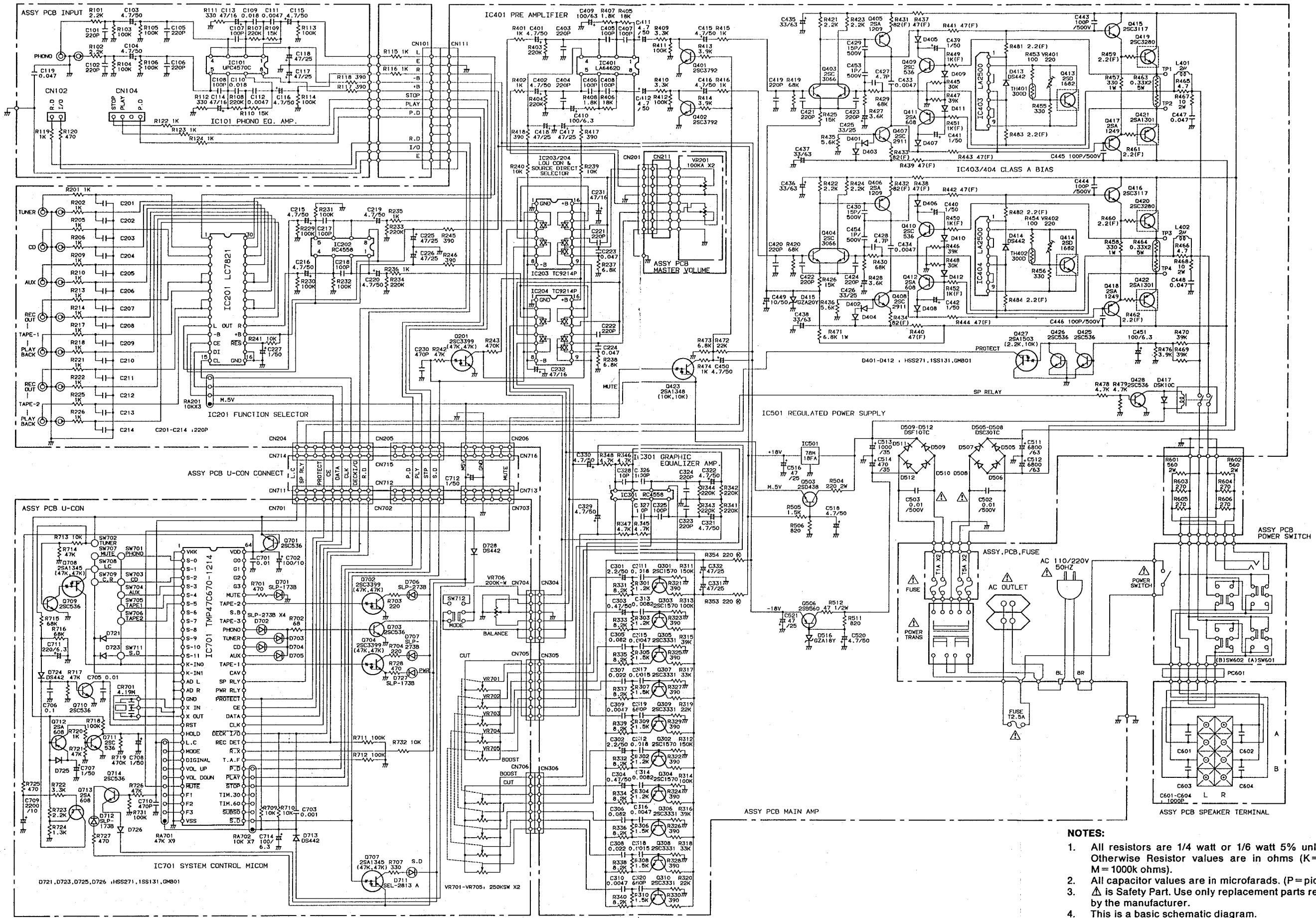
MAIN PRINTED CIRCUIT BORAD
(BOTTOM VIEW)



POINT TO POINT WIRING DIAGRAM



SCHEMATIC DIAGRAM



NOTES:

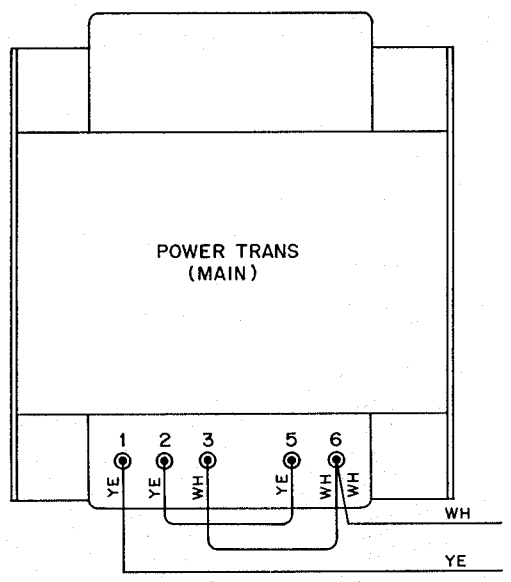
1. All resistors are 1/4 watt or 1/6 watt 5% unless marked. Otherwise Resistor values are in ohms (K=1000 ohms, M=1000k ohms).
2. All capacitor values are in microfarads. (P=picofarads).
3. ⚠ is Safety Part. Use only replacement parts recommended by the manufacturer.
4. This is a basic schematic diagram.

IMPORTANT NOTE

The Amplifier has been Factory-adjusted for operation on 220 V AC. The voltage can be changed for operation on 110 V AC by making the following changes on the Amplifier inside.

1. Remove the AC plug from the wall outlet.
2. Remove the screws securing the cover.
3. Disconnect White lead from Power Trans (Main) Terminal No. 5, and then connect it to Power Trans (Main) Terminal No 6.
4. Disconnect one of the Yellow leads from the Power Trans (Main) Terminal No. 2, and connect its lead to the Power Trans (Main) Terminal No. 5.

The Amplifier is now ready 110 V operation. DO NOT attempt to operate the Amplifier on 220 V.
Damage will result !



AC 110V ONLY

HL079Q4-3 / SERVICE MANUAL / 0893794FISHER
1 / WM57056?
SANYO

SANYO FISHER Vertriebs GmbH

Stahlgruberring 4 Tel: 089/420 45-0
8000 München 82 Tlx: 524033

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- Ersatzteillager -155/156/160/164
- Techn. Schulung -174

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